

WHAT IS CLAIMED IS:

1. A light emitting display comprising:

a display panel on which are formed a plurality of data lines for transmitting data current that displays video signals, a plurality of scan lines for transmitting a select signal, and a plurality of pixel circuits formed at a plurality of pixels defined by the data lines and the scan lines,

wherein at least one pixel circuit includes:

a light emitting element for emitting light corresponding to an applied current;

a first transistor, having first and second main electrodes and a control electrode, for supplying a driving current for the light emitting element;

a first switch for diode-connecting the first transistor in response to a first control signal;

a first storage unit for storing a first voltage corresponding to a threshold voltage of the first transistor in response to a second control signal;

a second switch for transmitting a data signal from a data line in response to the select signal from the scan line;

a second storage unit for storing a second voltage corresponding to a data current from the first switch; and

a third switch for transmitting the driving current from the first transistor to the light emitting element in response to a third control signal;

wherein a third voltage determined by coupling of the first and second storage units respectively storing the first and second voltages is applied to the first transistor to supply the driving current to the light emitting

element.

2. The light emitting display of claim 1, wherein in order. the second control signal is enabled, the select signal is enabled, and the third control signal is enabled

5 3. The light emitting display of claim 1, wherein the first switch, the second switch, the third switch and the first transistor are transistors of the same conductive type.

4. The light emitting display of claim 1, wherein at least one of the first switch, second switch and third switch has a conductive type opposite to
10 that of the first transistor.

5. The light emitting display of claim 1, wherein
the pixel circuit further comprises a fourth switch turned on in response to the second control signal, and coupled to a control electrode of the first transistor;

15 the second storage unit is formed by a first capacitor coupled between the control electrode and the first main electrode of the first transistor; and

the first storage unit is formed by parallel coupling of a second capacitor coupled between the first main electrode of the first transistor and a
20 second end of the fourth switch, and the first capacitor.

6. The light emitting display of claim 5, wherein
the second control signal is the select signal from the scan line, and
the fourth switch responds in the disable interval of the select signal.

7. The light emitting display of claim 5, wherein the first control signal

includes a select signal from a previous scan line and a select signal from a current scan line.

8. The light emitting display of claim 7, wherein the first switch includes a second transistor for diode-connecting the first transistor in response to the select signal from the previous scan line and a third transistor for diode-connecting the first transistor in response to the select signal from the current scan line.

9. The light emitting display of claim 5, wherein the second control signal includes a select signal from a previous scan line, and the third control signal.

10. The light emitting display of claim 9, wherein the pixel circuit further comprises a fifth switch coupled in parallel to the fourth switch; and

the fourth and fifth transistors are respectively turned on in response to the select signal from the previous scan line and the third control signal.

11. The light emitting display of claim 5, wherein the first control signal includes a select signal from a previous scan line and a select signal from the current scan line; and

the second control signal includes a select signal from the previous scan line and the third control signal.

12. The light emitting display of claim 1, wherein the pixel circuit further comprises a fourth switch having a first end coupled to the control electrode of the first transistor, and responding to the second control signal,

the first storage unit is formed by a first capacitor coupled between a second end of the fourth switch and the first main electrode of the first transistor, and

the second storage unit is formed by serial coupling of a second capacitor coupled between the second end of the fourth switch and the control electrode of the first transistor, and the first capacitor.

13. The light emitting display of claim 1, further comprising

a first driving circuit for supplying the select signal; the first control signal, the second control signal and the third control signal; and

a second driving circuit for supplying the data current;

wherein the first driving circuit and the second driving circuit are coupled to the display panel, mounted as an integrated circuit chip type on the display panel, or directly formed in the same layers of the scan lines, the data lines, and the first switch on the substrate.

14. A display panel of a light emitting display comprising:

a plurality of data lines for transmitting a data current that displays video signals;

a plurality of scan lines for transmitting a select signal;

a plurality of pixels defined by the data lines and the scan lines; and

a pixel circuit formed at each of the plurality of pixels;

wherein at least one pixel circuit includes:

a first transistor having a first main electrode coupled to a first power supplying a first voltage;

a first switch coupled between a second main electrode of the

first transistor and a data line and controlled by a first select signal from the scan line;

a second switch controlled by a first control signal to diode-connect the first transistor;

5 a third switch having a first end coupled to a control electrode of the first transistor, and being controlled by a second control signal;

a fourth switch having a first end coupled to a second main electrode of the first transistor, and being controlled by a third control signal;

10 a light emitting element, coupled between a second end of the fourth switch and a second power supplying a second voltage, for emitting light corresponding to the applied current;

a first storage unit coupled between the control electrode and the first main electrode of the first transistor when the third switch is turned on; and

15 a second storage unit coupled between the control electrode and the first main electrode of the first transistor when the third switch is turned off.

15. The display panel of claim 14, wherein

20 the second storage unit includes a first capacitor coupled between the control electrode and the first main electrode of the first transistor; and

the first storage unit is formed by parallel coupling of a second capacitor coupled between the first main electrode of the first transistor and a second end of the third switch, and the first capacitor.

16. The display panel of claim 15, wherein

the first control signal, the second control signal and the third control signal are respectively supplied by a first signal line, a second signal line and a third signal line; and

the display panel further comprises the first signal line, second signal line and third signal line.

17. The display panel of claim 16, wherein

the pixel circuit is driven in order of a first interval, a second interval, and a third interval;

the first control signal and the second control signal have an enable interval in the first interval;

the first control signal and the first select signal have an enable interval in the second interval; and

the second control signal and the third control signal have an enable interval in the third interval.

18. The display panel of claim 15, wherein

the second control signal is the first select signal from the scan line and

the third switch is turned on in a disable interval of the select signal.

19. The display panel of claim 18, wherein

the pixel circuit is driven in order of a first interval, a second interval and a third interval;

the first control signal having an enable interval in the first interval;

the first control signal and the first select signal having an enable interval in the second interval; and

the third control signal having an enable interval in the third interval.

20. The display panel of claim 19, wherein the first control signal has a disable interval when the first select signal is enabled.

21. The display panel of claim 15, wherein

5 the first control signal includes: the first select signal and a second select signal having an enable interval prior to the first select signal, the second select signal being from a previous scan line; and

the second switch includes second and third transistors for diode-connecting the first transistor in respective response to the second select signal and first select signal.

22. The display panel of claim 15, wherein

the second control signal includes: a second select signal having an enable interval prior to the first select signal; and the third control signal, the second select signal being from a previous scan line; and

15 the third switch includes second and third transistors, coupled between the control electrode of the first transistor and the second capacitor, for respectively responding to the second select signal and the third control signal.

23. The display panel of claim 15, wherein

20 the first control signal includes the first select signal and a second select signal having an enable interval prior to the first select signal, the second select signal being from a previous scan line;

the second control signal includes the second select signal and the third control signal;

the second switch includes a second transistor and a third transistor for diode-connecting the first transistor in respective response to the second select signal and the first select signal; and

the third switch includes a fourth transistor and a fifth transistor, coupled between the control electrode of the first transistor and the second capacitor, for respectively responding to the second select signal and the third control signal.

24. The display panel of claim 14, wherein

the first storage unit includes a first capacitor coupled between the first main electrode of the first transistor and the second end of the third switch; and

the second storage unit is formed by serial coupling of the second capacitor coupled between the control electrode of the first transistor and the second end of the third switch, and the first capacitor.

25. A method for driving a light emitting display having a pixel circuit including a switch for transmitting a data current from a data line in response to a select signal from a scan line, a transistor including a first main electrode, a second main electrode and a control electrode for outputting a driving current in response to the data current, and a light emitting element for emitting light corresponding to the driving current from the transistor, the method comprising:

storing a first voltage corresponding to a threshold voltage of the transistor in a first storage unit formed between the control electrode and the first main electrode of the transistor;

storing a second voltage corresponding to the data current from the

switch in a second storage unit formed between the control electrode and the first main electrode of the transistor;

coupling the first storage unit and the second storage unit to establish the voltage between the control electrode and the first main electrode of the transistor as a third voltage; and

transmitting the driving current from the transistor to the light emitting display;

wherein the driving current from the transistor is determined corresponding to the third voltage.

26. The method of claim 25, wherein

the first storage unit includes a first capacitor and a second capacitor coupled in parallel to the control electrode and the first main electrode of the transistor;

the second storage unit includes the first capacitor; and

the third voltage is determined by parallel coupling of the first and second capacitors.

27. The method of claim 25, wherein

the first storage unit includes a first capacitor coupled to the control electrode and the first main electrode of the transistor;

the second storage unit includes the first capacitor and a second capacitor coupled between the first capacitor and the control electrode of the transistor; and

the third voltage is determined by the first capacitor.

28. A method for driving a light emitting display having a pixel circuit

including a switch for transmitting a data current from a data line in response to a select signal from a scan line, a transistor including first and second main electrodes and a control electrode for outputting a driving current in response to the data current, and a light emitting element for emitting light corresponding to the driving current from the transistor, comprising:

diode-connecting the transistor in response to a first control signal, and coupling a first storage unit between the control electrode and the first main electrode of the transistor in response to a first level of a second control signal to store a first voltage corresponding to a threshold voltage of the transistor in the first storage unit;

diode-connecting the transistor by the first control signal, coupling a second storage unit between the control electrode and the first main electrode of the transistor in response to a second level of the second control signal, and storing a second voltage corresponding to the data current in the second storage unit in response to the first select signal;

coupling the first storage unit and the second storage unit in response to the first level of the second control signal to establish the voltage between the control electrode and the first main electrode of the transistor as a third voltage;

providing a driving current corresponding to the third voltage to the transistor; and

providing the driving current to the light emitting element in response to a third control signal.

29. The method of claim 28, wherein the first storage unit is coupled

between the control electrode and the first main electrode of the transistor in response to the first level of the second control signal.

30. The method of claim 28, wherein the first control signal, second control signal and third control signal are respectively transmitted through a separate first signal line, second signal line and third signal line.

31. The method of claim 28, wherein
the second control signal is a first select signal; and
the first level of the second control signal is a disable level of the first select signal.

32. The method of claim 31, wherein the first control signal has a disable interval when the first select signal becomes an enable level.

33. The method of claim 28, wherein
the first control signal includes the first select signal and a second select signal having an enable interval prior to the first select signal, the second select signal being from a previous scan line; and

the transistor is diode-connected by the respective second and first select signals.

34. The method of claim 28, wherein
the second control signal includes: a second select signal having an enable interval prior to the first select signal, and the third control signal, the second select signal being from the previous scan line; and

the first level of the second control signal is determined by the respective second select signal and the third control signal.

35. The method of claim 28, wherein

the first control signal includes the first select signal and a second select signal having an enable interval prior to the first select signal, the second select signal being from the previous scan line;

the second control signal includes the second select signal and the third control signal;

the transistor in is diode-connected by the respective second and first select signals; and

the first level of the second control signal is determined by the respective second select signal and the third control signal.

36. In a method for transmitting a data current showing video signals to a transistor in response to a first select signal to drive a light emitting element, a method for driving a light emitting display comprising:

establishing a first control signal and a second control signal respectively applied to a first switch and a second switch as an enable level to store a first voltage corresponding to a threshold voltage of the transistor;

establishing a third control signal applied to a third switch as a disable level to electrically intercept the transistor and the light emitting element; establishing the first select signal as a disable level to intercept the data current;

establishing the first select signal as an enable level to supply the data current;

respectively establishing the first control signal and the second control signal as enable and disable levels to store a second voltage corresponding to the data current;

establishing the first select signal as a disable level to intercept the data current;

respectively establishing the first control signal and the second control signal as disable and enable levels to apply a third voltage to a main electrode and a gate electrode of the transistor; and

establishing the third control signal as an enable level to transmit the current from the transistor to the light emitting element;

wherein the third voltage is determined by the first voltage and the second voltage.

37. The method of claim 36, wherein the second control signal is determined by the first select signal; and the second control signal has a level opposite to that of the first select signal.

38. The method of claim 36, wherein the first control signal is determined by the first select signal and a second select signal which becomes an enable level prior to the first select signal and becomes a disable level after the first control signal becomes an enable level.

39. The method of claim 36, wherein the second control signal is determined by a second select signal which becomes an enable level prior to the first select signal and becomes a disable level after the first control signal becomes an enable level, and the third control signal.

40. The method of claim 36, wherein the first control signal is determined by the first select signal and a second select signal which becomes an enable level prior to the first select

signal and becomes a disable level after the first control signal becomes an enable level; and

the second control signal is determined by the second select signal and the third control signal.